UNITED STATES PATENT AND TRADEMARK OFFICE

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER
CHAWAN, SHEELA C

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Preliminary Amendment

2.   Preliminary amendment filed on 5/15/06 has been entered.

Drawings

3.   The Examiner has approved drawings filed on 5/15/06.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

Claims 1- 6 are rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention. The Federal Circuit[1], relying upon Supreme Court

precedent[2], has indicated that a statutory "process" under 35 U.S.C. 101 must (1) be

tied to a particular machine or apparatus, or (2) transform a particular article to a

different state or thing. This is referred to as the "machine or transformation test",

whereby the recitation of a particular machine or transformation of an article must

impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*,

409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed

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[1] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

[2] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at

590"). While the instant claim(s) recite a series of steps or acts to be performed, the

claim(s) neither transform an article nor positively tie to a particular machine that

accomplishes the claimed method steps, and therefore do not qualify as a statutory

process.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States

before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United

States before the invention by the applicant for patent, except that an international application filed under the treaty defined in

section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the

international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 4, 7 and 8, are rejected under 35 U.S.C. 102(e) as being anticipated by

Wells et al., (US.7,328,153 B2).

As to claim 1, Wells discloses a method of comparing a query fingerprint to a

candidate fingerprint, the method being characterized by comprising (abstract):

determining a statistical model of the query fingerprint and/or a candidate fingerprint

and, on the basis of the statistical model, deriving a threshold distance within which the

query fingerprint and the candidate fingerprint may be declared similar (note, column 9,

lines10 - 31 and column 10, lines 20 - 47 explains the method of comparing the test

fingerprint with a database of fingerprints. Also, see figure 1A. If the distance difference

is smaller than the reference distance - accept. If the difference is greater - reject. Also

see column 20, lines 47- 65 and column 21, lines 1 - 8 for the explanation of finger print

matching and determining the valid match).

As to claim 2, Wells discloses a method of matching a query object to a known

object, wherein a plurality of candidate fingerprints representing a plurality of candidate

objects are pre-stored in a database, the method comprising receiving an information

signal forming part of the query object and constructing a query fingerprint there from

and comparing the query fingerprint to a candidate fingerprint in the database, the

method being characterized by the further steps of: determining a statistical model for

the query fingerprint and/or the candidate fingerprint; and on the basis of the statistical

model, deriving a threshold distance within which the query fingerprint and the

candidate fingerprint may be declared similar(note, the stored database consists of (

column 19, lines 63 - 65 ,column 9, lines 59 - 67; column 10, lines 20 - 47) signal

conditioning, sampling for finger prints, and storing for determining a query fingerprint

and a test fingerprint (column 9, lines 39 – 59, column 19, lines 63 - 65) the fingerprint

matching is explained).

Regarding claim 3, it is interpreted and thus rejected for the same reasons as

applied above in the rejection of claim 2.

As to claim 4, Wells discloses the method of claim 1, wherein the statistical

model comprises the result of performing an internal correlation on the query fingerprint

and/or the candidate fingerprint (column 20, lines 47- 67 and column 21, line 1 - 9

explains the steps in internal fingerprint matching process. The steps in correlation

matching are explained in detail although, the word "correlation" is not used. Also, see

figures 7A and 7B for details in the steps of analysis).

As to claim 7, Wells discloses apparatus for matching a query object to a known

object, the apparatus comprising a fingerprint extraction module (110) for receiving an

information signal forming part of a query object and constructing a query fingerprint

therefrom and a fingerprint matching module (210) for comparing the query fingerprint to

candidate fingerprints stored in a database (215) to one or more candidate fingerprints,

the apparatus being characterized by also comprising(note, column 9, lines10 - 31 and

column 10, lines 20 - 47 explains the method of comparing the test fingerprint with a

database of fingerprints. Also, see figure 1A. If the distance difference is smaller than

the reference distance - accept. If the difference is greater - reject. Also see column

20, lines 47- 65 and column 21, lines 1 - 8 for the explanation of finger print matching

and determining the valid match).

a statistical module (120) for determining a statistical model of the query

fingerprint and/or one or more of the one or more candidate fingerprints;

a threshold determiner (120) deriving, on the basis of the statistical model, a threshold

distance T within which the query fingerprint and a potentially best matching candidate

fingerprint may be declared similar(note, column 9, lines10 - 31 and column 10, lines 20

- 47 explains the method of comparing the test fingerprint with a database of

fingerprints. Also, see figure 1A. If the distance difference is smaller than the reference

distance - accept. If the difference is greater - reject. Also see column 20, lines 47- 65

and column 21, lines 1 - 8 for the explanation of finger print matching and determining

the valid match),(column 19, lines 63 - 65 ,column 9, lines 59 - 67; column 10, lines 20 - 47) signal conditioning, sampling for finger prints, and storing for determining a query fingerprint and a test fingerprint (column 9, lines 39 – 59, column 19, lines 63 - 65) the fingerprint matching is explained ; and

　　　an identification module (230) arranged such that if a candidate fingerprint is found to be separated from the query fingerprint by a distance less than the threshold distance T, and the distance between the candidate and the query fingerprint is less than the distance between any other candidate fingerprint and the query fingerprint, then the candidate fingerprint is declared the best matching candidate fingerprint and the candidate object represented by the best matching candidate fingerprint and the query object represented by the query fingerprint are deemed to be the same. (Figure 16 and column 30, line 45 to 58. The processor (1602, figure 16 – processes the data received from 1604 – and generates fingerprints, compares and stores the data in 1606, column 10 line 20 to 48 and the processor (1602) in figure 16 and figure explains the process associated with the device. The processor consists of the modules to perform the set functions (column 30 line 10 to 34), threshold determination – (column 23 line 33 to 36) is performed by the processor (figure 16, element 1602), Figure 16 (element 1602) the process is explained with the help of figure 7, and column 20, line 47 to 67 and column 21 line 1 to 8).

　　　Regarding claim 8, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 7.

Allowable Subject Matter

6.   Claims 5, 6 and 9 and 10 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

        None of the prior art on record teaches or fairly suggests, wherein the fingerprints

comprise a plurality of frames containing binary values and the statistical model is

computed for the query fingerprint by determining a transition probability q for the query

fingerprint by determining how many bits of a frame of the query fingerprint $F(m,k)$ are

different from their corresponding bit in their preceding fingerprint frame $F(m,k-l)$ and

dividing the number of transitions by a maximum value $M^*(k-l)$, which would be obtained

if all fingerprint bits were of an opposite state to their corresponding preceding bit,

where each fingerprint comprises M bits per frame and spans K frames, in which k is

the frame index (ranging from 0 to K) and m is the bit-index within a frame (ranging from

0 to M), as required by claim 5 and 9.

        As to claims 6 and 10, Wells discloses the method of claim 5, wherein the

threshold distance T is computed from the following equation based on a desired False

Acceptance Rate (FAR): claim 6 and 10 contains formula, FAR = 1 2 .times. erfc

.function. (1 - 2 .times. T 2 .times. n .times. 1 + (1 - 2 .times. q) 2 1 - (1 - 2 .times. q)

2),

Other prior art cited

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holm et al.,(US.7,013,301 B2) discloses audio fingerprint system and method.

Reisman et al., (US. 7,142,699 B2) discloses fingerprint matching using ridge features maps.

Contact Information

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to SHEELA C. CHAWAN whose telephone number is

(571)272-7446. The examiner can normally be reached on 7.30- 5.00.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 /Sheela C Chawan/

 3/27/09

Primary Examiner, Art Unit 2624